

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2002-195247

(43)Date of publication of application : 10.07.2002

(51)Int.Cl.

F16C 11/10

(21)Application number : 2000-400430

(71)Applicant : HOSIDEN CORP

(22)Date of filing : 28.12.2000

(72)Inventor : IMAI TORU  
TANAKA AKIHIRO

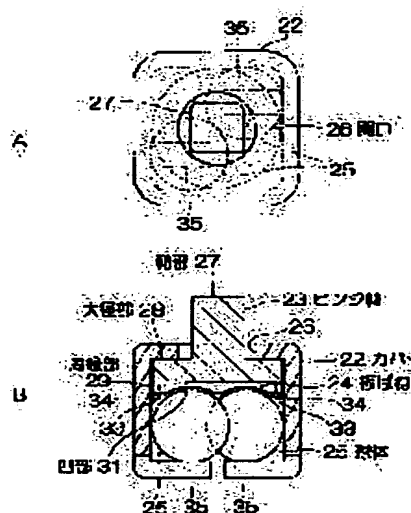
## (54) HINGE DEVICE AND FOLDING TYPE APPARATUS

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a hinge device capable of actualizing smooth rotation of a hinge shaft and also achieving a longer life.

**SOLUTION:** The hinge device is comprised of a square cylinder-shaped cover 22 forming an opening 26 in an end face, a shaft portion 27, a large diameter portion 28, a peripheral edge portion 29, and a concave portion 31. The shaft portion 27 is comprised of a hinge shaft 23 protruded through the opening 26 and also accommodated in the cover 22, a circular plate spring 24 having a waveform in a peripheral direction, in which a projection 33 is connected with the peripheral edge portion 29 and is also accommodated in the concave portion 31, and a pair of a spherical body 25 elastically keeping in contact with the plate spring 24 by holding between the plate spring 24 and an other end face of the cover 22 and also locating in a position in which a pair of the spherical body are opposed each other at 180 degrees around an axis of a hinge shaft 23. The spherical body 25 rotatably keeps in contact with its plate face of the plate spring 24 in proportion to rotation of the hinge shaft 23 while elastically deforming the plate spring. Torque is consequently generated in the hinge shaft 23 by means of elastic deformation.

ヒンジ装置 21



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision]

(19)日本国特許庁 (J P)

(12) 公開特許公報 (A)

(11)特許出願公開番号

特開2002-195247

(P2002-195247A)

(43)公開日 平成14年7月10日(2002.7.10)

(51)Int.Cl.

F 1 6 C 11/10

識別記号

F I

F 1 6 C 11/10

特コード(参考)

C 3 J 1 0 5

審査請求 未請求 請求項の数7 OL (全9頁)

(21)出願番号 特願2000-400430(P2000-400430)

(22)出願日 平成12年12月28日(2000.12.28)

(71)出願人 000194918

ホシデン株式会社

大阪府八尾市北久宝寺1丁目4番33号

(72)発明者 今井 徹

大阪府八尾市北久宝寺1丁目4番33号 ホシデン株式会社内

(72)発明者 田中 彰弘

大阪府八尾市北久宝寺1丁目4番33号 ホシデン株式会社内

(74)代理人 100066153

弁理士 草野 卓 (外1名)

Fターム(参考) 3J105 AA02 AA03 AB24 AC07 AC10

DA04 DA15

(54)【発明の名称】 ヒンジ装置及び折り畳み式機器

(57)【要約】

【課題】 ヒンジ軸の円滑な回転を実現し、かつ長寿命化を図る。

【解決手段】 一端面に開口26が形成された角筒状カバー22と、軸部27と大径部28と周縁部29と凹部31とを有し、軸部27が開口26から突出されてカバー22に收容されたヒンジ軸23と、周方向に波形形状を有し、突起33が周縁部29に係止されて凹部31に收容された円形板ばね24と、板ばね24とカバー22の他端面とによって挟まれて板ばね24と弾接し、ヒンジ軸23の軸心回りの互いに180°をなす位置に位置決めされた一対の球体25とよりなるものとする。ヒンジ軸23の回転に伴い、球体25が板ばね24を弾性変形させながら、その板面と転接し、その弾性変形によってヒンジ軸23にトルクを発生させる。

ヒンジ装置 21

